

**REMARKS**

The Office Action mailed March 3, 2005, has been received and reviewed. Claims 1 through 19 are currently pending in the application. Claims 1 through 4, 6 through 10, 12 through 16, 18 and 19 stand rejected. Claims 5, 11 and 17 have been objected to as being dependent upon rejected base claims, but the indication of allowable subject matter in such claims is noted with appreciation. Applicants have amended claims 1-5, 7, and 9-19, cancelled claims 6 and 8, and respectfully request reconsideration of the application as amended herein.

**35 U.S.C. § 102 Anticipation Rejections****Anticipation Rejection Based on U.S. Patent No. 6,427,402 to White**

Claims 1, 2, and 6 through 10 stand rejected under 35 U.S.C. § 102(e) as being anticipated by White (U.S. Patent No. 6,427,402). Applicants respectfully traverse this rejection, as hereinafter set forth.

A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference. *Verdegaal Brothers v. Union Oil Co. of California*, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987). The identical invention must be shown in as complete detail as is contained in the claim. *Richardson v. Suzuki Motor Co.*, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

White discloses a wall system comprising a plurality of pile members. An interlock system locks adjacent pile members together. The pile members have a body portion 20 formed by a wall 30 in the shape of a hollow cylinder and defining an inner surface 32 and an outer surface 34. First and second channel arms 40 and 42 on the outer surface 34 of the body portion 20 form a receiving channel 60. (Col. 5, lines 18-35, FIG. 1)

Claim 1, as amended herein, recites “A casing section for use in a barrier, the casing section comprising: a hollow elongated body having an inner surface, an outer surface, a longitudinal axis, a length and a perimeter; *a plurality of inner walls within the hollow elongated body*; a plurality of female interlock structures in the form of channels disposed within the body in a predetermined arrangement, each of the channels *defined by the inner surface of the hollow elongated body and at least one inner wall of the plurality* and extending substantially parallel to the long axis along the length of the body and including an access slot thereinto from an exterior of the hollow elongated body; an inner chamber within the hollow elongated body defined by at

least some inner walls of the plurality and having at least one inner wall in common with the at least one inner wall defining a female interlock structure of the plurality; and a male interlock structure protruding from the exterior of the hollow elongated body and extending substantially parallel to the longitudinal axis and extending substantially along the length of the body, the male interlock structure configured to extend into an access slot of a channel of a female interlock structure of another casing section.” Emphasis added.

White fails to disclose a plurality of inner walls within a hollow elongated body, a plurality of female interlock structures in the form of channels within the body, or an inner chamber within the hollow elongated body defined by at least some inner walls. Rather, the pile members disclosed in White have a receiving channel 60 formed with first and second channel arms 40 and 42 on the outer surface 34 of the body portion 20. Therefore, White does not disclose each and every element of claim 1. Accordingly, it is respectfully submitted that claim 1 is not anticipated by White.

Claims 2, 7 and 9-10 are each allowable, among other reasons, as depending from claim 1 which should be allowed. Claims 6 and 8 have been cancelled.

Claim 9 is further allowable because White fails to disclose a bleed slot in an inner wall.

Claim 10 is further allowable because White fails to disclose an inner wall and an external wall of a hollow elongated body defining a grout injection manifold.

Anticipation Rejection Based on U.S. Patent No. 5,360,293 to Breaux

Claims 1, 6 and 7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Breaux (U.S. Patent No. 5,360,293). Applicants respectfully traverse this rejection, as hereinafter set forth.

Breaux discloses a joint/sealing system for interlocked, in-ground barrier members which for an in-ground containment wall. The joint includes an extended male member 309 with two “T” shaped, flanking members 302. When joined to an adjacent barrier member, the male member 309 mates and extends into the centrally located, female cavity 310, while the flanking members 302 couple with the like “T” shape configured chambers 302’ formed by the joint members 304 which flank the female leg members 307. As shown in FIG. 6, the male member 309, flanking members 302, joint members 304, and female leg members 307 all radially extend

Claim 1, as amended herein, recites “a plurality of female interlock structures in the form of recesses disposed within the body in a predetermined arrangement, each of the recesses defined by the inner surface of the hollow elongated body and at least one inner wall”

Breux fails to disclose female interlock structures in the form of recesses disposed within the body. Rather, the female cavity 310 disclosed in Breux extends outward from the cylindrical unit 300. Therefore, Breux does not disclose each and every element of claim 1. Accordingly, it is respectfully submitted that claim 1 is not anticipated by Breux.

Claim 7 is allowable, among other reasons, as depending from claim 1 which should be allowed. Claim 6 has been cancelled.

Anticipation Rejection Based on U.S. Patent No. 910,421 to Schlueter

Claims 1, 6, 7 and 8 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Schlueter (U.S. Patent No. 910,421). Applicants respectfully traverse this rejection, as hereinafter set forth.

Schlueter discloses an interlocking construction for use in forming wharves, piers, docks, and sea-walls. The construction consists of interlocking tubes or hollow piles. Metal tubes may be filled with cement or concrete. The adjacent sides of the pipes or tubes 5 are provided with counterpart tongues 15 and grooves 16 of dove-tail or similar shape. Within each pipe, one or more rods 17 may be introduced for the purpose of reinforcing the cement or concrete filling 18.

Claim 1, as amended herein, recites a plurality of inner walls within a hollow elongated body; recesses defined by the inner surface of the hollow elongated body and at least one inner wall, and an inner chamber within the hollow elongated body defined by inner walls.

Schlueter fails to disclose a plurality of inner walls within a hollow elongated body, a plurality of female interlock structures in the form of recesses disposed within the body defined by the inner surface of the hollow elongated body and at least one inner wall, or an inner chamber within the hollow elongated body defined by at least some inner walls. Rather, the hollow piles disclosed in Schlueter are metal tubes with grooves 16 of dove-tail or similar shape. The hollow piles of Schlueter include no inner walls. Therefore, Schlueter does not disclose each and every element of claim 1. Accordingly, it is respectfully submitted that claim 1 is not anticipated by Schlueter.

Claim 7 is allowable, among other reasons, as depending from claim 1 which should be allowed. Claims 6 and 8 have been cancelled.

### 35 U.S.C. § 103(a) Obviousness Rejections

#### Obviousness Rejection Based on U.S. Patent No. 5,800,096 to Barrow in view of U.S. Patent No. 5,360,293 to Breaux

Claim 1 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Barrow (U.S. Patent No. 5,800,096) in view of Breaux (U.S. Patent No. 5,360,293). Applicants respectfully traverse this rejection, as hereinafter set forth.

M.P.E.P. 706.02(j) sets forth the standard for a Section 103(a) rejection:

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or combine reference teachings. Second, there must be a reasonable expectation of success. Finally, **the prior art reference (or references when combined) must teach or suggest all the claim limitations.** The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). (Emphasis added).

Barrow teaches a subsurface barrier wall having a number of interconnected columns. The columns include interlocking elements which slidably couple adjacent columns together. Each column section 102 has a first interlocking element 104 and a second interlocking element 106 located on opposite sides of the column section. The first interlocking element 104 is an open channel with a slot 118 and is composed of two L-shaped plates 105 welded to the exterior of the body 114 of the column section 102. The two L-shaped plates 105 are spaced apart to form a longitudinally-extending slot 118 that opens into a longitudinally extending cavity 116. The second interlocking element 106 is a T-shaped or I-beam shaped rail that is welded to the body 114. The first and second interlocking elements 104, 106 maintain the spaced relationship between adjacent columns 112.

The teachings of Breaux have been summarized above.

Applicant asserts that the combination of the Barrow and the Baux references do not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of independent claim 1 because, at the very least, the cited references do not teach or suggest all of the claim limitations of the presently claimed invention.

Applicant asserts that the cited references do not teach or suggest the claim limitations of the presently claimed invention of independent claim 1 calling for a plurality of inner walls within a hollow elongated body, a plurality of female interlock structures in the form of channels disposed within the body, each of the channels defined by the inner surface of the hollow elongated body and at least one inner wall, and an inner chamber within the hollow elongated body defined by at least some inner walls of the plurality and having at least one inner wall in common with the at least one inner wall defining a female interlock structure of the plurality.

The female cavity 310 taught in Baux extends outward from the cylindrical unit 300. Barrow teaches a first interlocking element 104 that is an open channel with a slot 118 and is composed of two L-shaped plates 105 welded to the *exterior* of the body 114 of the column section 102. The two L-shaped plates 105 are spaced apart to form a longitudinally-extending slot 118 that opens into a longitudinally extending cavity 116. Neither Baux nor Barrow teach inner walls.

Accordingly, the Barrow and the Baux references cannot and do not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of independent claim 1.

Obviousness Rejection Based on U.S. Patent No. 5,800,096 to Barrow in view of U.S. Patent No. 910,421 to Schlueter

Claims 1, 2, 6, 7, and 12 through 16 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Barrow (U.S. Patent No. 5,800,096) in view of Schlueter (U.S. Patent No. 910,421). Applicants respectfully traverse this rejection, as hereinafter set forth.

The teachings of Barrow and Schlueter have been summarized above.

Applicant asserts that the cited references do not teach or suggest the claim limitations of the presently claimed invention of independent claim 1 calling for a plurality of inner walls within a hollow elongated body, a plurality of female interlock structures in the form of channels

disposed within the body, each of the channels defined by the inner surface of the hollow elongated body and at least one inner wall, and an inner chamber within the hollow elongated body defined by at least some inner walls of the plurality and having at least one inner wall in common with the at least one inner wall defining a female interlock structure of the plurality.

Barrow teaches a first interlocking element 104 that is an open channel with a slot 118 and is composed of two L-shaped plates 105 welded to the *exterior* of the body 114 of the column section 102. The two L-shaped plates 105 are spaced apart to form a longitudinally-extending slot 118 that opens into a longitudinally extending cavity 116. Neither Breaux nor Barrow teach inner walls. The hollow piles taught in Schlueter are metal tubes with grooves 16 of dove-tail or similar shape. The hollow piles of Schlueter include no inner walls.

Accordingly, the Barrow and the Schlueter references cannot and do not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of independent claim 1.

Claims 2, 7, and 12-16 are each allowable, among other reasons, as depending from claim 1 which should be allowed. Claim 6 has been cancelled.

Obviousness Rejection Based on U.S. Patent No. 5,800,096 to Barrow and U.S. Patent No. 910,421 to Schlueter as applied to claim 1 above, and further in view of U.S. Patent No. 5,758,993 to Schmednecht et al.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Barrow (U.S. Patent No. 5,800,096) and Schlueter (U.S. Patent No. 910,421) as applied to claim 1 above, and further in view of Schmednecht et al. (U.S. Patent No. 5,758,993). Applicants respectfully traverse this rejection, as hereinafter set forth.

The teachings of Barrow and Schlueter have been summarized above.

Schmednecht teaches a method and an apparatus for forming successive overlapping voids in the ground. The apparatus includes a mandrel for forming voids in the ground. The mandrel includes a plurality of downwardly projecting spaced-apart cutting teeth for facilitating penetration of the mandrel into the ground. The mandrel 30 also includes a rigid guide fin 76. The rigid guide fin extends rearwardly from the predetermined course of travel 18. In use, the rigid guide fin 76 is placed within a previously formed void. Preferable, the rigid guide fin has a

relatively long length and includes a sharp edge portion 78 which facilitates penetration of the mandrel 30 into the ground 10.

Claim 3 is allowable, among other reasons, as depending from claim 1 which should be allowed. Claim 3 is additionally allowable as there is no suggestion whatsoever in the cited references for any combination or modification thereto for the claim limitations set forth in claim 3. Any such suggestions come solely from the Applicant's disclosure not the cited prior art references. A *prima facie* case of obviousness will not be established without some objective reason to combine the teachings of the references. *Ex parte Levengood*, 28 USPQ2d 1300 (Bd. Pat. App. & Inter. 1993). The capability of one of ordinary skill in the art cannot be relied upon to provide the suggestion to combine references. *Al-Site Corp. v. VSI Int'l Inc.*, 174 F.3d 1308, 50 USPQ2d 1161 (Fed. Cir. 1999).

Barrow and Schlueter fail to teach a sharpened edge. Schmednecht teaches a rigid guide fin including a sharp edge portion 78 which facilitates penetration of the mandrel 30 into the ground 10. There is no suggestion whatsoever to modify the interlocking elements of Barrow or the tongues of Schlueter with the sharp edge portion of the rigid guide fin of Schmednecht, as the interlocking elements of Barrow and the tongues of Schlueter fit with interlocking elements of adjacent columns or grooves of adjacent tubular structures. The columns of Barrow form subsurface barrier walls and the tubular structures of Schlueter form sea-walls, and are not used to form successive overlapping voids in the ground as the mandrel of Schmednecht.

Accordingly, the Barrow, Schlueter, and the Schmednecht references cannot and do not establish a *prima facie* case of obviousness under 35 U.S.C. § 103 regarding the presently claimed invention of claim 3.

Obviousness Rejection Based on U.S. Patent No. 5,800,096 to Barrow and U.S. Patent No. 910,421 to Schlueter as applied to claim 1 above, and further in view of U.S. Patent No. 5,584,610 to Simpson et al.

Claim 4 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Barrow (U.S. Patent No. 5,800,096) and Schlueter (U.S. Patent No. 910,421) as applied to claim 1 above, and further in view of Simpson et al. (U.S. Patent No. 5,584,610). Applicants respectfully traverse this rejection, as hereinafter set forth.

The teachings of Barrow and Schlueter have been summarized above.

Simpson teaches PVC panels for a bulkhead, characterized by an elongated S-shaped cross section and an axial passage extending from top to bottom.

Claim 4 is allowable, among other reasons, as depending from claim 1 which should be allowed.

Obviousness Rejection Based on U.S. Patent No. 5,800,096 to Barrow and U.S. Patent No. 910,421 to Schlueter as applied to claim 1 above, and further in view of U.S. Patent No. 5,030,034 to Bodine

Claims 18 and 19 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Barrow (U.S. Patent No. 5,800,096) and Schlueter (U.S. Patent No. 910,421) as applied to claim 1 above, and further in view of Bodine (U.S. Patent No. 5,030,034). Applicants respectfully traverse this rejection, as hereinafter set forth.

The teachings of Barrow and Schlueter have been summarized above.

Bodine teaches a pair of spaced walls formed from corrugated metal sheets joined together with a bottom plate being attached to the edges of the walls to form a box-like structure.

Claim 18 and 19 are each allowable, among other reasons, as depending from claim 1 which should be allowed.

**Objections to Claims 5, 11 and 17/Allowable Subject Matter**

Claims 5, 11 and 17 stand objected to as being dependent upon rejected base claims, but are indicated to contain allowable subject matter and would be allowable if placed in appropriate independent form. New claim 20 has been written to include all of the limitations of claim 5 and as well as the limitations of base claim 1 prior to the present amendments thereto.

New claim 21 has been written to include all of the limitations of claim 11 and as well as the limitations of base claim 1 prior to the present amendments thereto. New claims 22-23 depend from new claim 21. New claim 24 has been written to include all of the limitations of dependent claims 14, 15 and 17, as well as the limitations of independent claim 1 prior to the present amendments thereto. Consequently, it is believed that new claims 20 through 24 are also in condition for allowance.

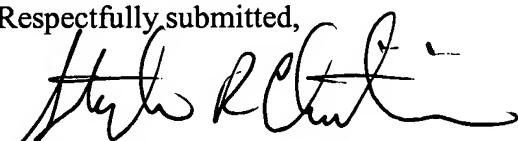
**ENTRY OF AMENDMENTS**

The amendments to claims 1 through 5, 7, and 9 through 19 above and new claims 20 through 24 should be entered by the Examiner because the amendments are supported by the as-filed specification and drawings and do not add any new matter to the application. Further, the amendments do not raise new issues or require a further search.

**CONCLUSION**

Claims 1 through 5, 7, and 9 through 24 are believed to be in condition for allowance, and an early notice thereof is respectfully solicited. Should the Examiner determine that additional issues remain which might be resolved by a telephone conference, he is respectfully invited to contact Applicants' undersigned attorney.

Respectfully submitted,



Stephen R. Christian  
Registration No. 32,687  
Attorney for Applicants  
P.O. Box 1625  
Idaho Falls, ID 83415-3899  
Phone: (208) 526-9140  
Fax: (208) 526-8339

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